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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/782,532	02/13/2001	Gregory Hagan Moulton	UND011	7507

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EXAMINER

PHILLIPS, HASSAN A

ART UNIT

PAPER NUMBER

2151

DATE MAILED: 11/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/782,532

Applicant(s)

MOULTON ET AL.

Examiner

Hassan Phillips

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3-10,12-21,23,24,26-28,33-37 and 39-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-10,12-21,23,24,26-28,33-37 and 39-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

1. This action is in response to amendments received on August 5, 2004.

### ***Claim Objections***

1. The Examiner has verified the correct spelling of the word "Fibre" in claim 9, and therefore has withdrawn the corresponding objection.
2. After consideration of the amendments made to claims 39, 41, 46, and 47, the Examiner has withdrawn the corresponding objections.

### ***Claim Rejections - 35 USC § 112***

1. After consideration of the amendments made to claims 13, 33, 35, 38-40, and 44, to address antecedent basis issues, the Examiner has withdrawn all rejections to the corresponding claims.

### ***Response to Arguments***

1. Applicant's arguments filed August 5, 2004 have been fully considered but they are not persuasive. Applicant argued that:
  - a) Carter fails to show storing data across a plurality of network-accessible devices by implementing a RAID-type distribution;

- b) Carter fails to teach the use of a parity scheme.
- c) Carter fails to teach communicating state information between its devices.
- d) Carter fails to teach determining when a fault condition is likely and preemptively migrating stored data amongst network devices.

Examiner respectfully submits that Applicant has misinterpreted the prior art of record.

Regarding item a), in col. 16, lines 43-45, Carter shows that his shared memory space can be a RAID. In col. 8, lines 31-39, Carter also shows that this memory space may consist of **one or more** persistent storage devices on the network. Carter further shows in col. 8, lines 42-50, that coherence is maintained among the storage devices, and data is replicated. The Examiner has interpreted a "RAID-type" distribution as a storage method in which data is distributed across a group of computers on the network that function as a single unit. Thus, the teachings of Carter have all the makings for a "RAID-type" distribution as claimed by the Applicant.

Regarding item b), being that the teachings of Carter show all the makings for a "RAID-type" distribution, replicating data and maintaining data coherence suggest implementation of a n-dimensional parity scheme as well. This is further illustrated in col. 23, lines 12-27, where a replication controller copies data, and stores data in separate memories on the network.

Regarding item c), as the applicant admits, Carter does teach passing state information, relating to the use of files on the network-accessible storage devices, among the devices. Although Carter does not explicitly teach passing "**operational**

state" information among the devices, claim 21 reads, "...communicating state information for the plurality of network-accessible storage devices between the plurality of network-accessible storage devices...", and fails to mention communicating **operational state information of the network devices** among the devices. Therefore, the teachings of Carter cover the claimed limitation.

Regarding item d), as the applicant admits, Carter teaches a coherence migration process. In the teachings of Carter, it is also mentioned that this process "provides for fault tolerant operation, as the failure of any one device will not result in the loss of data", col. 23, lines 12-27. Thus, it is inherent in the teachings of Carter that this process takes place because faults are "likely" to occur in the devices, and therefore the process provides storage messages that are used preemptively to migrate the data amongst the storage devices.

Furthermore, the Examiner has interpreted the claim language as broadly as possible. It is also the Examiner's position that Applicant has not yet submitted claims drawn to limitations, which define the operation and apparatus of Applicant's disclosed invention in a manner that distinguishes over the prior art.

Failure for Applicant to significantly narrow definition/scope of the claims implies the Applicant intends broad interpretation be given to the claims. The Examiner has interpreted the claims with scope parallel to the Applicant in the response and reiterated the need for Applicant to define the claimed invention more clearly and distinctly.

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Accordingly the references supplied by the examiner in the previous office action covers claims 1, 3-10, 12-21, 23, 24, 26-28, 33-37, 39-41, 44-51. Applicant is requested to review the prior art of record for further consideration.

2. Applicant's arguments with respect to claims 42-43, 52-54, have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 52, 53 are rejected under 35 U.S.C. 102(e) as being anticipated by Carter.

3. In considering claim 52, Carter teaches the RAID-type distribution comprising managing redundancy operations across the plurality of network-accessible devices. See col. 8, lines 31-50.

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4. In considering claim 53, Carter teaches the RAID-type distribution comprising one or more functionalities selected from the group consisting of data striping, data mirroring, parity data distribution, parity data mirroring, and data entry as N-separated secrets. See col. 23, lines 12-27.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 42-43, are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter in view of Gershman et al. (hereinafter Gershman), U.S. Patent 6,199,099.

3. In considering claim 42, although the disclosed method of Carter shows substantial features of the claimed invention, it fails to explicitly disclose:

The network devices transmitting heartbeat messages to be processed by the storage management processes.

Nevertheless, using heartbeat messages in network managing operations was well known in the art at the time of the present invention. In a similar field of endeavor,

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Gershman shows this. More specifically, Gershman teaches a system and method for managing a mobile communication network comprising:

Monitoring a network device by having the network device transmit heartbeat messages, (col. 47, lines 61-65).

Thus, given the teachings of Gershman, it would have been obvious to one of ordinary skill in the art to modify the teachings of Carter to show monitoring the data storage for faults by means of the plurality of storage management processes, wherein the monitoring comprises at least a portion of the plurality of network accessible storage devices transmitting heartbeat messages. Doing so would have provided an efficient means for the storage management processes to take appropriate action when a fault is detected through the monitoring, Gershman, col. 47, lines 65-67, col. 48, lines 1-4.

4. In considering claim 43, the method disclosed by Carter teaches compensating for faults by manipulating the data storage under control of the storage management processes. See col. 23, lines 12-27.

5. Claim 54, is rejected under 35 U.S.C. 103(a) as being unpatentable over Carter in view of Thompson, U.S. Patent 4,814,984.

6. In considering claim 54, although the disclosed method of Carter shows substantial features of the claimed invention, it fails to explicitly disclose:

Communicating an operational state between devices.

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Nevertheless, communicating an operational state between devices was well known in the art at the time of the present invention. In a similar field of endeavor, Thompson shows this. More specifically, Thompson teaches a system and method for communicating between devices on a network comprising:

Maintaining a state table at each device on the network that indicates the operational state of other devices on the network, (col. 3, lines 29-33).

Thus, given the teachings of Thompson, it would have been obvious to one of ordinary skill in the art to modify the teachings of Carter to show communicating state information between the devices on the network, wherein the state information comprises access speed, transfer rate, network locality, physical locality, interconnectedness, security, reliability, political domain, capacity, or cost. This would have provided an efficient means for communicating valuable information between devices that would help in determining whether communication between the devices is appropriate, Thompson, col. 11, lines 26-30.

### ***Conclusion***

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within


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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hassan Phillips whose telephone number is (571) 272-3940. The examiner can normally be reached on M-F 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung can be reached on (571) 272-3939. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
ZARNI MAUNG  
PRIMARY EXAMINER